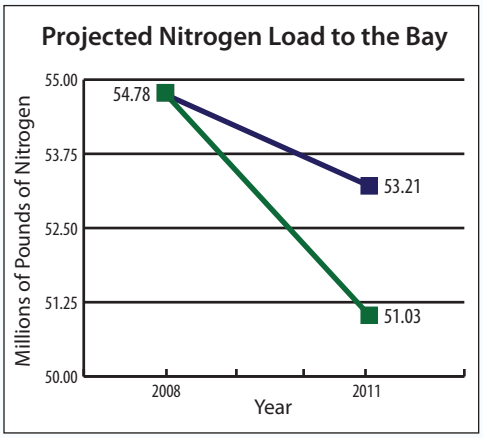
Maryland

2011 Milestones to Reduce Nitrogen and Phosphorus

Chesapeake Bay Program
A Watershed Partnership

Nitrogen Reduction Milestone

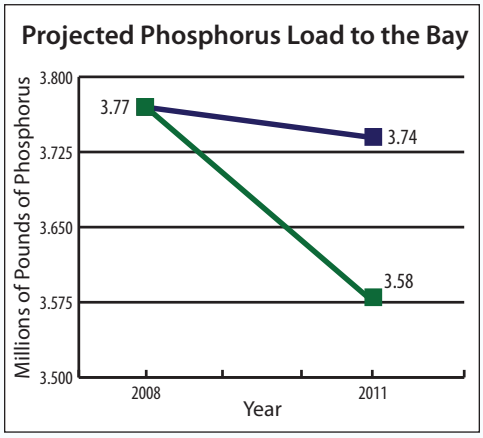


Maryland's 2011 milestone commitment is to reduce nitrogen by 3.75 million pounds by the end of the three-year period (2009-2011).

	Projected*
Reduction at Previous Rate of Progress	1.57M
Pollution Load after Previous Rate of Progress	**53.21M**
Reduction at Milestone Rate of Progress	3.75M
Pollution Load after Milestone Rate of Progress	**51.03M**
Increase in Rate of Progress	**138%**

M = Millions of Pounds of Nitrogen

Phosphorus Reduction Milestone

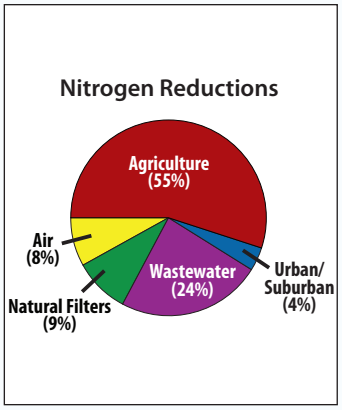


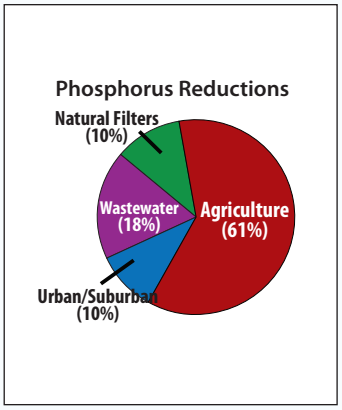
Maryland's 2011 milestone commitment is to reduce phosphorus by 193,000 pounds by the end of the three-year period (2009-2011).

	Projected*
Reduction at Previous Rate of Progress	32,045 lbs.
Pollution Load after Previous Rate of Progress	**3.74M**
Reduction at Milestone Rate of Progress	193,000 lbs.
Pollution Load after Milestone Rate of Progress	**3.58M**
Increase in Rate of Progress	**502%**

M = Millions of Pounds of Phosphorus

Pollution Reductions by Source





Funding During Milestone Period

Bay Restoration Fund	**$590M**
Trust Fund	**$69.6M**
MACS	**$17.8M**
Farm Bill	**$96.6M**
TOTAL	**$774M**

* Nitrogen and phosphorus reductions are based on Phase 4.3 Watershed Model data for agricultural, urban/suburban and air reductions and monitored data for wastewater reductions.

For more, contact: Frank Dawson, (410) 260-8110, fdawson@dnr.state.md.us

Pollution Reduction Actions by End of 2011

Agriculture

Cover Crops	460,000 acres/year
Nutrient Management Plan Enforcement	100,000 acres
Soil Conservation and Water Quality Plans	257,049 acres
Manure Transport	10,000 tons/year
Heavy Use Poultry Area Concrete Pads	400 farms
Livestock Waste Structures	145 structures
Water Control Structures	200 structures
Dairy Manure Incorporation Technology	2,500 acres/year
Stream Protection with Fencing	3,000 acres
Poultry Manure Incorporation Technology	2,500 acres/year
Poultry Waste Structures	53 structures
Stream Protection without Fencing	3,000 acres
Runoff Control Systems	75 systems

Wastewater

Wastewater Treatment Plants ENR	39,000 fewer lbs. P 740,000 fewer lbs. N
Blue Plains BNR Upgrade	190,000 fewer lbs. N

Urban/Suburban

Stormwater Runoff Management Retrofits	90,000 acres
Required septic retrofits (inside Critical Area)	1,080 systems
Voluntary septic retrofits (non-Critical Area)	1,920 systems

Natural Filters - Private Land

Streamside Grass Buffers	7,000 acres
Streamside Forest Buffers	3,000 acres
Wetland Restoration	700 acres
Retire Highly Erodible Land	1,800 acres

Natural Filters - Public Land

Streamside Grass Buffers	1,000 acres
Streamside Forest Buffers	2,100 acres
Wetland Restoration	1,000 acres
Retire Highly Erodible Land	2,000 acres

Air

Maryland Healthy Air Act	305,882 less N

Additional Reduction Options

Agriculture

Increase manure transport program activity exporting poultry litter out of the watershed.
Increase enrollment of dairy and poultry manure incorporation technology beyond 2,500 acres each, annually.
Implement precision agriculture on 100,000 acres.
Implement ammonia emissions reductions at poultry houses.

Urban/Suburban

Require all new and failing septic systems statewide to be replaced with best available technology.
Require 1:1 or 2:1 best available technology septic system offsets for all new septic systems statewide.
Require each acre of new development to be offset by retrofitting two acres of pre-1985 land for stormwater management.
Connect septic systems in targeted watersheds with high septic loads (e.g., Magothy, Severn and South Rivers) to WWTPs where it is cost-effective and where sprawl growth will not be encouraged.

Natural Filters

Substantially increase conversion of state-owned agricultural leases to forests or wetlands.
Increase implementation of streamside buffers on agricultural and suburban lands.

General

Implement Bay Bank and/or other effective nutrient and sediment cap and trade program.
Increase funding for the 2010 Trust Fund as needed.

Assessments of Future Management Actions

Revise nutrient reduction estimates for cover crops to reflect the latest scientific conclusions.
Conduct an independent review of Maryland's nutrient management planning program and consider options to improve effectiveness based on available science.
Conduct nutrient mass balance study to better target and implement BMPs.
Study the feasibility of extending the critical area protective provisions to non-tidal waters.
Evaluate the potential nutrient reduction for wastewater treatment plants using ENR from 4 mg/l limit on each plant to 3 mg/l and the potential sprawl implications of that action.
Create a State Development Plan, as required by Maryland law, to identify changes to State-level programs and policies that could significantly reduce sprawl.

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